



# Perceptions on 21<sup>st</sup> Century Skills with Special Reference to B.Ed. Colleges in Sikkim

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## **Abstract**

A handbook on 21<sup>st</sup> Century Skills prepared by Central Board of Secondary Education (CBSE) has mentioned three main components of 21<sup>st</sup> Century skills which are called as skill sets or 3 Ls namely learning skills, life skills and literacy skills. Further, learning skill is classified into four types broadly known as 4Cs and they are critical thinking and problem solving, creativity and innovation, collaboration and communication (CBSE, 2020). 'The Partnership for 21st Century Learning (P21) has developed the Framework for 21st Century Learning where it has discussed the skills, knowledge and expertise that students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise and literacies' (Santos, 2017). The curriculum of secondary teacher education programme in Sikkim was revised based on NCTE Curriculum Framework 2014, NCERT Model Syllabus (2016), UGC-CBCS and NEP-2020 which was subsequently implemented across the state from academic session 2023-2024. This paper reflects the perceptions on 21<sup>st</sup> century learning skills with special reference to B.Ed. colleges in Sikkim. The study was quantitative in nature. The objective of the study was to study the perceptions of B.Ed. prospective teachers on 21<sup>st</sup> century learning skills. Cross-sectional survey method was used. The purposive sampling method was used to select the sample. The sample for the present study was comprised of semester III (Second year) prospective teachers from two B.Ed. colleges. Questionnaire prepared by investigator was used in the present study. The data were analysed using descriptive statistical technique. The major findings of the study revealed that 86.9% B.Ed. prospective teachers expressed that their B.Ed. coursework encourages them to think critically, apply critical and analytical thoughts, and create arguments. 91.5% B.Ed. prospective teachers stated that their B.Ed. curriculum helps them to think creatively and independently. 87% B.Ed. prospective teachers expressed that collaborative activities are well-integrated in their B.Ed. curriculum and 93.8 % B.Ed. prospective teachers revealed that their B.Ed. program helps them to improve their communication skills.

**Keywords:** 21<sup>st</sup> Century Skills, B.Ed. Curriculum, Prospective Teachers, B.Ed. Colleges.

## 1.0 Introduction

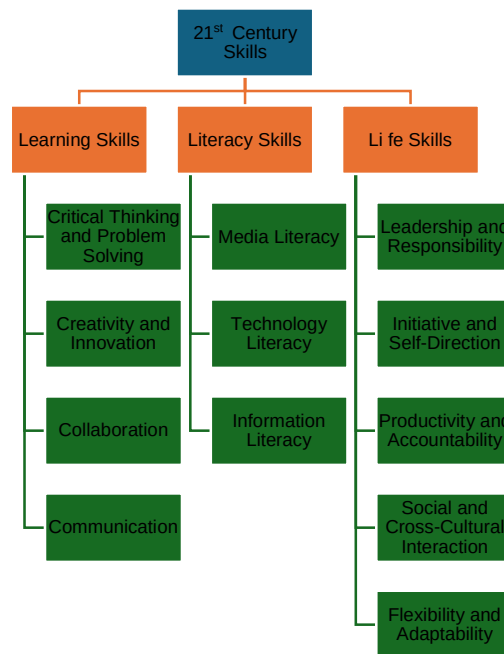
According to Indonesia's Ministry of Research, Technology, and Higher Education of Indonesia, “Integrative, comprehensive, scientific, contextual, thematic, effective, collaborative, and student-centered are some of the attributes of 21<sup>st</sup> century learning” (Kemristekdikti, 2018 cited in Wulandari, 2021). ‘The Partnership for 21st century learning (P21) has developed the framework for 21st century learning where it has discussed the skills, knowledge and expertise that students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise and literacies’ (Santos, 2017). The Glossary of Education define “the term 21st century skills as a broad set of knowledge, skills, work habits, and character traits that are believed by educators, school reformers, college professors, employers, and others to be critically important to success in today’s world” (CBSE, 2020). In a simple way, 21st Century skills are the abilities needed to help a person meet the demands of a world that is globally engaged, digitally changing, collaboratively advancing, creatively developing, seeking competent human resources, and swiftly embracing change. These skills undoubtedly help to every individual learner for their overall growth in order to contribute to the advancement and development of their society, country, and the world. ‘Understanding and embedding 21<sup>st</sup> century skills in teacher education is no longer optional but an imperative for sustainable and quality education systems’ (Yarriswamy, 2025). The importance of 21st century skills in teacher education institutions such as B.Ed. colleges cannot be overstated. ‘Teachers are the leading actors in developing 21<sup>st</sup> century skills among students in the classroom, hence, teachers must absolutely be trained on the 21<sup>st</sup> century skills’ (Agaoglu & Demir, 2020). In a world characterized by complexity and rapid change, education must evolve to prepare prospective teacher for global citizenship and lifelong success. By cultivating critical thinking and problem solving, creativity and innovation, communication and collaboration skills, B.Ed. college can nurture responsible and innovative prospective teacher prepared to serve for society and nation building.

## 2.0 Components of 21<sup>st</sup> Century Skills

According to a handbook on 21<sup>st</sup> Century Skills prepared by Central Board of Secondary Education (CBSE) published in the year 2020 has mentioned three main components of 21<sup>st</sup> Century Skills which are called as skill sets or 3 Ls namely learning skills, life skills and literacy skills.

**Fig 1**

Flowchart depicting components of 21<sup>st</sup> Century Skills



Source: 21<sup>st</sup> Century Skills: A Handbook, CBSE, 2020.

### 3.0 Learning Skills

Learning skill is one of the important 21<sup>st</sup> century skills which basically required for the acquisition of new knowledge. Learning skills for the twenty-first century involves more than just people knowing enough or being skilled. It encompasses the growth of a person's thinking, questioning, comprehending, and problem-solving abilities as well as the impact of this growth on the person's academic and social performance. Developing students' 21st century learning talents, which include higher order thinking abilities, performances, and skills, can be considered to have a big impact on their social development and ability to adapt to changing demands and stay up with the changing times (Onur, 2020). Learning skill is classified into four types broadly known as 4Cs and they are critical thinking and problem solving, creativity and innovation, collaboration and communication (CBSE, 2020).

### 4.0 Review of Related Literature

4Cs of learning skills i.e. critical thinking and problem-solving, communication, collaboration, and creativity and innovation are foundational in 21st-century education (Anand, 2024). The integration of 21st century skills in thematic learning can increase student activity in learning, increase potential and develop soft skill and hard skill competencies of students (Alifah, 2022). Curriculum-integrated constructivist approach, the design thinking process aids students in effectively tackling academic subject while strengthening 21st century abilities (Van, 2019). Collaboration skills are low, especially among school children and workers, however collaboration skill have an important role for students to develop so they can work together in groups in facing 21st-century competition (Mellyzar et al., 2025). Teacher education programs must be reoriented to foster 21<sup>st</sup> century skills, enabling teachers to serve as facilitators of inquiry, designers of learning experiences, and mentors of socio-emotional growth (P21, 2019 as cited in Yarriswamy, 2025). The prospective teachers' 21st century skills mean scores did not significantly differ with reference to their gender and subject of study (Rahman et al., 2025). CBSE-2020 handbook document on 21<sup>st</sup> century skills, NEP- 2020 and NCFSC- 2023

persistently vocal for recognition of 21<sup>st</sup> century skills in the curriculum transaction at every stage of school education making every pupil capable with 21<sup>st</sup> century skills and prepare them to become a competent citizen and ready for the future.

### 5.0 Need and Significance of the Study

In today's complex and ever-changing world acquisition of Knowledge only is not enough. 21<sup>st</sup> century's needs and demands are different from prior centuries. Apparently, it expects every citizen to be fully aware about oneself with the different sets of skill essential for meeting those needs and demands of 21<sup>st</sup> century. In India, 21<sup>st</sup> century educational documents and policies like the National Curriculum Framework, 2005 (NCF-2005), Central Board of Secondary Education (CBSE) Handbook, 2020, National Education Policy, 2020 (NEP- 2020) and National Curriculum Framework for School Education, 2023 (NCFSE- 2023) have placed a strong emphasis on the importance of 21<sup>st</sup> century learning skills in the teaching-learning process across the school education. Specifically, in a recent days NCFSE- 2023 and the NEP- 2020 highlights a need to raise awareness among teachers about multi-sensory pedagogical experiences to develop 21st-century skills and competencies in their students (Mehra & Singh, 2025). Hence this paper has tried to study the perceptions of B.Ed. prospective teachers on 21<sup>st</sup> century skills in Sikkim.

### 6.0 Objective of the study

To study the perceptions of B.Ed. prospective teachers on 21<sup>st</sup> century learning skills with reference to;

- (i) Critical thinking and problem-solving skills.
- (ii) Creativity and innovation skills.
- (iii) Collaboration skills.
- (iv) Communication skills.

### 7.0 Methodology

A descriptive survey method with cross-sectional survey design was followed in the study. Such design was used because the investigators collected data for the present study at one point in time through self-constructed questionnaire. There are three B.Ed. colleges in the state of Sikkim. Out of these three colleges, one is government college (Govt. B.Ed. college, Soreng) and other two are private colleges (Loyola College of Education, Namchi and Harkamaya College of Education, Gangtok). For the present study one government college and one private college were selected. The purposive sampling method was used. The III semester prospective teachers of the selected colleges were taken as the sample for the present study. The total sample for the study was 176 prospective teachers. The collected data were analysed using descriptive statistical technique.

## 8.0. Analysis and Interpretation

The researcher analysed the collected data by using percentage and qualitative description which is presented in the following tables and paragraphs.

**Table 1.1**

*Perceptions of B.Ed. prospective teachers on critical thinking and problem-solving skills*

| Sl. No | Items                                                                                                                | Strongly Disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly Agree (%) |
|--------|----------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|-------------|-----------|--------------------|
| 01     | I analyse problems before making decisions.                                                                          | 1.7                   | 0.6          | 21.6        | 54        | 22.2               |
| 02     | I can evaluate different perspectives before forming a conclusion.                                                   | 0.6                   | 0.6          | 25.6        | 59.1      | 14.2               |
| 03     | I use logical reasoning and critical reflection in my academic work.                                                 | 1.1                   | 0.6          | 18.8        | 63.6      | 15.9               |
| 04     | My B.Ed. coursework encourages me to think critically, apply critical and analytical thoughts, and create arguments. | 1.1                   | 0            | 11.9        | 58.5      | 28.4               |
| 05     | I can identify the root cause of a problem effectively.                                                              | 0                     | 1.7          | 32.4        | 58        | 8                  |

Table 1.1 depicts the perceptions on critical thinking and problem-solving skills among the B.Ed. prospective teachers in Sikkim. It has five items. 22.2% strongly agree that they analyse problems before making decisions and 54% agree with the same statement. However, 21.6% were neutral and very few respondents (i.e. 0.6% disagree and 1.7% strongly disagree) expressed disagreement with the statement. Similarly, most respondents (73.3%) expressed that they can evaluate different perspectives before forming a conclusion. 25.6% displayed neutral and very few respondents (1.2%) expressed disagreement with the statement. 63.6% agree that they used logical reasoning and critical reflection in their academic work and 15.9% strongly agree with the same statement. However, 18.8% expressed neutral and very few 1.7% were disagreed with the statement. 58.5% agreed that their B.Ed. coursework encourages them to think critically, apply critical and analytical thoughts and create arguments. Further, 28.4% strongly agreed with the same statement. Contrary, 11.9% expressed neutral and 1.1% strongly disagreed with the statement. Lastly, 58% agreed that they can identify the root cause of a problem effectively and further, 8% stated strong agreement with the same statement. However, on contrary, only 1.7% expressed disagreement with the statement. Meanwhile, 32.4% expressed neutral which may reflect their uncertainty about an identification of the root cause of a problem effectively.

**Table 1.2***Perceptions of B.Ed. prospective teachers on creativity and innovation skills*

| Sl. No | Items                                                                                    | Strongly Disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly Agree (%) |
|--------|------------------------------------------------------------------------------------------|-----------------------|--------------|-------------|-----------|--------------------|
| 01     | I am encouraged to do creative assignments and presentations in my B.Ed. program.        | 0.6                   | 0            | 9.7         | 57.4      | 32.4               |
| 02     | I can generate original ideas and creativity for classroom activities.                   | 0.6                   | 1.7          | 22.7        | 58.5      | 16.5               |
| 03     | Creativity is valued in my assignments and presentations.                                | 0                     | 0            | 20.5        | 58        | 21.6               |
| 04     | I am allowed to share the creative and noble ideas during the teaching-learning process. | 0                     | 0            | 14.2        | 60.2      | 25.6               |
| 05     | The B.Ed. curriculum helps prospective teachers to think creatively and independently.   | 0                     | 0            | 8.5         | 42.6      | 48.9               |

Table 1.2 depicts the perceptions on creativity and innovation skills among the B.Ed. prospective teachers in Sikkim. It has five items. 32.4% strongly agree that they were encouraged to do creative assignments and presentations in their B.Ed. program and 57.4% agree with the same statement. However, 9.7% were neutral and only 0.6% expressed disagreement with the statement. Similarly, most respondents (75%) expressed that they can generate original ideas and creativity for classroom activities. 22.7% expressed neutral and very few respondents (2.3%) expressed disagreement with the statement. 58% agree that their creativity is valued in their assignments and presentations and 21.6% strongly agree with the same statement. However, 20.5% expressed neutral and none of the respondents were disagreed with the statement. 60.2% agreed that they were allowed to share the creative and noble ideas during the teaching-learning process. Further, 25.6% strongly agreed with the same statement. Contrary, 14.2% expressed neutral and none of the respondent expressed disagreement with the statement. Lastly, 42.6% agreed that their B.Ed. curriculum helps them to think creatively and independently and further 48.9% stated strong agreement with the same statement. However, on contrary, none of the respondent expressed disagreement with the statement. Meanwhile, 8.5% expressed neutral showing their uncertainty about whether their B.Ed. curriculum helps them to think creatively and independently or not.

**Table 1.3***Perceptions of B.Ed. prospective teachers on collaboration skills*

| Sl. No | Items                                         | Strongly Disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly Agree (%) |
|--------|-----------------------------------------------|-----------------------|--------------|-------------|-----------|--------------------|
| 01     | I enjoy working on group projects.            | 0                     | 2.3          | 21          | 56.3      | 20.5               |
| 02     | I contribute equally in team assignments.     | 1.1                   | 0.6          | 2.8         | 54        | 41.5               |
| 03     | I respect others' opinions during group work. | 0.6                   | 0            | 2.3         | 54.5      | 42.6               |

|    |                                                                       |     |     |      |    |      |
|----|-----------------------------------------------------------------------|-----|-----|------|----|------|
| 04 | I have learned how to resolve conflicts in a team.                    | 0   | 0   | 20.5 | 67 | 12.5 |
| 05 | Collaborative activities are well-integrated in our B.Ed. curriculum. | 1.1 | 0.6 | 11.4 | 54 | 33   |

Table 1.3 depicts the perceptions on collaboration skills among the B.Ed. prospective teachers in Sikkim. It has five items. 20.5% strongly agree that they enjoy working on group projects and 56.3% agree with the same statement. However, 21% were neutral and very few respondents 2.3% expressed disagreement with the statement. Similarly, almost all respondents (95.5%) expressed that they can contribute equally in team assignments. Only 2.8% expressed neutral and very few respondents (1.7%) expressed disagreement with the statement. 54.5% agree that they respect others' opinions during group work and 42.6% strongly agree with the same statement. However, 2.3% expressed neutral and only 0.6% expressed disagreement with the statement. 67% agreed that they have learned how to resolve conflicts in a team. Further, 12.5% strongly agreed with the same statement. On the Contrary, 20.5% expressed neutral and none of the respondent expressed disagreement with the statement. Lastly, 54% agreed that collaborative activities are well-integrated in their B.Ed. curriculum and 33% strongly agree with the same statement, however on the contrary, only 1.7% expressed disagreement with the statement. Meanwhile, 11.4% expressed neutral which may reflect their uncertainty about whether collaborative activities are well-integrated in their B.Ed. curriculum or not.

**Table 1.4**

*Perceptions of B.Ed. prospective teachers on communication skills*

| Sl. No | Items                                                                                                       | Strongly Disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly Agree (%) |
|--------|-------------------------------------------------------------------------------------------------------------|-----------------------|--------------|-------------|-----------|--------------------|
| 01     | I can express my ideas clearly in group discussions.                                                        | 0.6                   | 0.6          | 34.7        | 50        | 14.2               |
| 02     | I feel confident when speaking in front of a group.                                                         | 0                     | 3.4          | 39.2        | 47.7      | 9.7                |
| 03     | I can effectively communicate through written assignments, viva voce, and presentations.                    | 0                     | 2.3          | 23.9        | 60.2      | 13.6               |
| 04     | I use proper communication in digital formats (emails, presentations, Google Meet, Zoom, and social media). | 0.6                   | 2.3          | 34.1        | 50.6      | 12.5               |
| 05     | My B.Ed. program helps to improve my communication skills.                                                  | 0.6                   | 0            | 5.7         | 48.9      | 44.9               |

Table 1.4 depicts the perceptions on communication skills among the B.Ed. prospective teachers in Sikkim. It has five items. 14.2% strongly agree that they can express their ideas clearly in group discussions and 50% agree with the same statement. However, 34.7% expressed neutral and very few respondents (1.2%) expressed disagreement with the statement. 47.7% agreed that they feel confident when speaking in front of a group and 9.7% strongly agree with the same statement. However, on the contrary, 39.2% expressed neutral and 3.4% expressed disagreement with the statement. 60.2% agree that they can effectively communicate through

written assignments, viva voce, and presentations and 13.6% strongly agree with the same statement. However, 23.9% expressed neutral and very few 2.3% expressed disagreement with the statement. 50.6% agreed that they use proper communication in digital formats (emails, presentations, Google Meet, Zoom, and social media). Further, 12.5% strongly agreed with the same statement. On the Contrary, 34.1% expressed neutral and 2.9% stated disagreement with the statement. Lastly, 48.9% agreed that their B.Ed. program helps them to improve their communication skills and further 44.9% stated strong agreement with the same statement. However, on the contrary, only 0.6% expressed disagreement with the statement. Meanwhile, 5.7% stated neutral which shows their uncertainty about whether their B.Ed. program helps them to improve their communication skills or not.

## 9.0 Major Findings of the Study

- 86.9% prospective teachers expressed that their B.Ed. coursework encourages them to think critically, apply critical and analytical thoughts, and create arguments.
- 76.2% prospective teachers expressed that they can analyse problems before making decisions and 73.3% prospective teachers stated that they can evaluate different perspectives before forming a conclusion.
- 79.5% prospective teachers stated that they used logical reasoning and critical reflection in their academic work.
- 66% prospective teachers stated that they can identify the root cause of a problem effectively.
- 89.8% prospective teachers expressed that they are encouraged to do creative assignments and presentations in their B.Ed. program, however, only 75% stated that they can generate original ideas and creativity for classroom activities.
- 91.5% prospective teachers stated that their B.Ed. curriculum helps them to think creatively and independently, however, only 79.6% expressed that creativity is valued in their assignments and presentations.
- 85.8% prospective teachers expressed that they are allowed to share the creative and noble ideas during the teaching-learning process.
- 76.8% prospective teachers stated that they enjoy working on group projects and 95.5% said that they contribute equally in team assignments.
- 97.1% prospective teachers expressed that they respect others' opinions during group work and 79.5% said that they have learned how to resolve conflicts in a team.
- 87% prospective teachers expressed that collaborative activities are well-integrated in their B.Ed. curriculum.
- 64.2% prospective teachers can express their ideas clearly in group discussions, however, only 57.4% feel confident when speaking in front of a group.

- 73.8% prospective teachers can effectively communicate through written assignments, viva voce, and presentations, however, only 63.1% use proper communication in digital formats (emails, presentations, Google Meet, Zoom, and social media).
- 93.8% prospective teachers expressed that their B.Ed. program helps them to improve their communication skills.

## 10.0 Conclusion

Integration of 21<sup>st</sup> century learning skills across the B.Ed. curriculum is important and much anticipated and needed shift required considering the need and demand of the complex contemporary society. 21<sup>st</sup> century society needs and expects its citizens to be competent with the 21<sup>st</sup> century skills. All the 21<sup>st</sup> century educational policies and documents highlight the requirement to move away from traditional teaching-learning process towards experiential based pedagogical strategies promoting critical thinking and problem-solving skills, creativity and innovation skills, collaboration skills and communication skills among the learners. All these 21<sup>st</sup> century learning skills helps the prospective teacher to become an independent thinker, capable of solving the problems, developed high self-esteem and more importantly groom to become a competent and abled citizens of the future.

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